

## REMARKS

Claims 1-18 are pending. Claims 2-4 have been canceled. Claims 1 and 5 have been amended. No new matter has been added by way of this amendment. Reconsideration of the application is requested.

Claims 1-18 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,287,419 to *Takeuchi* et al. in view of U.S. Patent No. 4,608,361 to *Kanamori* et al. In response to this ground of rejection, Applicants have filed a terminal Disclaimer that is in compliance with 37 C.F.R. § 1.321(c). Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

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Claims 1-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,228,218 to *Takeuchi* et al. in view of U.S. Patent No. 6,287,419 to *Takeuchi* et al. and U.S. Patent No. 4,608,361 to *Kanamori* et al. This rejection is traversed.

Claim 1 has been amended to include the limitation “a gel compound formed from colloidal particulates and an electrolyte, where the colloidal particulates are colloidal silica, and a content of the colloidal silica is from 0.25 g to 25 g in terms of silicic acid anhydride, relative to 100 g of the fibers.”

U.S. Patent No. 4,608,361 to *Kanamori* et al. relates to a process for producing a sheet for a catalyst carrier for vapor-phase reactions which comprises mixing highly heat resistant

ceramic fibers, organic fibers and an organic binder to form a slurry, forming the slurry into a paper sheet, impregnating the paper sheet with a silicon compound, converting the silicon compound to silica gel and heating the impregnated sheet to burn up the organic fibers and organic binder. According to this reference, the process produces an improved catalyst carrier for vapor-phase reactions having properties of high porosity and good strength (see *Abs.*).

On page 3 of the Office Action, the statement is set forth that:

“*Kanamori et al.* describes the use of colloidal silica, gel compound with amounts which provide strength to paper products which can be fibrous among others, (column 2, lines 16-48). *Kanamori* describes the strength imparted, (column 4, lines 4-29).”

However, the *Kanamori et al.* patent relates to a catalyst carrier, which when in its final form is not decomposable in water. That is, *Kanamori et al.* fails to teach the use of colloidal silica in a water-decomposable fibrous sheet.

In addition, *Kanamori* describes “since there is then a tendency towards a lowering of the strength of the final article, however, it is desirable that the total amount of the organic material be restricted to 15% or less, either the ethyl silica or the colloidal silica should preferably be impregnated in quantities of the order of 60 to 120 grams per 100 grams of paper.” Therefore, even after the paper “comprising ceramic fibrous, organic fibrous, organic binder and colloidal silica” of *Kanamori et al.* is fired to leave these ceramic fibers and the colloidal silica, the content of the colloidal silica of *Kanamori et al.* never overlaps the range (0.25g to 25g), as set forth in amended claim 1.

In view of the foregoing, Applicants respectfully assert that claim 1 is patentable over the cited references and reconsideration and withdrawal of the rejection are therefore requested.

In light of the patentability of amended independent claim 1, for the reasons above, dependent claims 5-18 are patentable over the prior art.

In light of the foregoing remarks, this application should be in condition for allowance. Early passage of this case to issue is respectfully requested. However, if there are any questions regarding this Response, or the application in general, a telephone call to the undersigned would be appreciated since this expedite the prosecution of the application for all concerned.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'A. Collins', written over a horizontal line.

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## COMPLETE SET OF CLAIMS

1. (Amended) A water-decomposable fibrous sheet comprising: water-dispersible fibers having a fiber length of at most 20 mm, and a gel compound formed from colloidal particulates and an electrolyte, wherein

the colloidal particulates are colloidal silica, and a content of the colloidal silica is from 0.25 g to 25 g in terms of silicic acid anhydride, relative to 100g of the fibers.

5. (Amended) The water-decomposable fibrous sheet as set forth in claim 1, which contains an aqueous solution infiltrated thereinto and the aqueous solution contains at least 0.2 % by mass of the electrolyte.

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6. The water-decomposable fibrous sheet as set forth in claim 1, which further contains a binder for binding the fibers to each other.

7. The water-decomposable fibrous sheet as set forth in claim 6, wherein the binder is at least one compound selected from a group consisting of alkyl celluloses, carboxymethyl cellulose, polyvinyl alcohol, modified polyvinyl alcohols, sodium polyacrylate, sodium alginate, polyethylene oxide, starch, and modified starches.

8. The water-decomposable fibrous sheet as set forth in claim 6, wherein a layer containing the binder and the colloidal silica is formed on the surface of a fibrous layer of the water-dispersible fibers.

9. The water-decomposable fibrous sheet as set forth in claim 6, wherein a layer of the binder is formed on the surface of a fibrous layer of the water-dispersible fibers containing the colloidal silica.

10. The water-decomposable fibrous sheet as set forth in claim 6, which contains the colloidal silica and the binder in a fibrous layer of the water-dispersible fibers.

11. The water-decomposable fibrous sheet as set forth in claim 8, wherein the fibrous layer is of a water-decomposable non-woven fabric having been subjected to water-jetting treatment.

12. The water-decomposable fibrous sheet as set forth in claim 9, wherein the fibrous layer is of a water-decomposable non-woven fabric having been subjected to water-jetting treatment.

13. The water-decomposable fibrous sheet as set forth in claim 10, wherein the fibrous layer is of a water-decomposable non-woven fabric having been subjected to water-jetting treatment.

14. The water-decomposable fibrous sheet as set forth in claim 8, wherein the fibrous layer is of a water-decomposable paper having been prepared in a paper-making process.

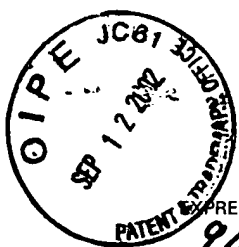
15. The water-decomposable fibrous sheet as set forth in claim 9, wherein the fibrous layer is of a water-decomposable paper having been prepared in a paper-making process.

16. The water-decomposable fibrous sheet as set forth in claim 10, wherein the fibrous layer is of a water-decomposable paper having been prepared in a paper-making process.

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17. The water-decomposable fibrous sheet as set forth in claim 1, wherein a weight of the fibers falls from 30 to 80 g/m<sup>2</sup>

18. The water-decomposable fibrous sheet as set forth in claim 1, which has a degree of decomposition in water of at most 200 seconds measured in wet according to JIS P-4501, a strength at break in dry of at least 1400 g/25 mm, and a strength at break in wet of at least 150 g/25 mm.



## EXPRESS MAIL CERTIFICATE

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I hereby certify that, on the date indicated above, this paper or fee was deposited with the U.S. Postal Service and that it was addressed for delivery to the Assistant Commissioner for Patents, Washington, DC 20231 by "Express Mail Post Office to Addressee" service.

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PATENT TRADEMARK OFFICE

Docket No: 2309/0H713

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Naohito TAKEUCHI et al.

Serial No.: 09/675,890

Art Unit: 1771

Filed: September 29, 2000

Examiner: GUARRIELLO, John

For: WATER-DECOMPOSABLE FIBROUS SHEET CONTAINING GEL COMPOUND

September 12, 2002

Assistant Commissioner for Patents  
Washington, D.C. 20231

**MARK-UP FOR AMENDMENT OF SEPTEMBER 12, 2002**  
**PURSUANT TO 37 C.F.R. § 1.121**

Sir:

**IN THE CLAIMS:**

1. (Amended) A water-decomposable fibrous sheet comprising: water-dispersible fibers having a fiber length of at most 20 mm, and a gel compound formed from colloidal particulates and an electrolyte, wherein

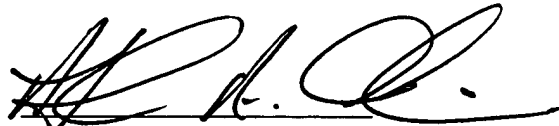
the colloidal particulates are colloidal silica, and a content of the colloidal

silica is from 0.25 g to 25 g in terms of silicic acid anhydride, relative to 100g of the

fibers.

5. (Amended) The water-decomposable fibrous sheet as set forth in claim [3] 1, which contains an aqueous solution infiltrated therein and the aqueous solution contains at least 0.2 % by mass of the electrolyte.

Respectfully submitted,



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